



Dart Hawkesbury
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200
Fax 613 632-5246

Purchasing Receipts

PO No	Supplier	Line Item	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name
PO040531	MCM001-VU	11	1	2% 10 Net 30	MT-BRASS-C360-R2.500	Brass C360 Round Bar 2.500"				6	8/17/2018	6			Stock	8/10/2018	\$ 117.94 / ft	4		\$707.65	McMaster-Carr Supply Co,
Total:											6	6								\$707.65	

Plex 8/14/2018 11:12 AM dart.Tollis Andrew

200 Aurora Industrial Pkwy
Aurora OH 44202-8087
330-995-5500
cle.sales@mcmaster.com

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury ON K6A 1K7
Canada

Purchase Order
PO040531
Order Placed By
Chantal Lavoie

McMaster-Carr Number
6559637-05

Page 1 of 2
08/08/2018

Line	Product	Ordered	Shipped
11	2572T77 Ultra-Machinable 360 Brass Rod with Certification, 2-1/2" Diameter, 6 Feet Long	1 Each	1

Shipped separately from our Cleveland warehouse on 07/20

1	54175A74 6-Point Standard Impact Socket, 3/4" Square Drive, 50mm Size	3 Each	2
2	7856K75 Heat-Shrink Tubing, 25 Feet Long, 0.25" ID Before Shrinking, Black	2 Each	2
3	91610A209 18-8 Stainless Steel Slotted Spring Pin, 2mm Diameter, 18mm Long	2 Packs	2
4	91292A142 18-8 Stainless Steel Socket Head Screw, M6 x 1 mm Thread, 40 mm Long	2 Packs	2
5	91698A306 Black-Oxide 18-8 Stainless Steel Phillips Flat Head Screws, M3 x 0.5 mm Thread, 10 mm Long	1 Pack	1
6	91292A138 18-8 Stainless Steel Socket Head Screw, M6 x 1 mm Thread, 25 mm Long	1 Pack	1
7	8993K72 304 Stainless Steel 90 Degree Angle, 1/4" Wall Thickness, 3" x 3" Outside, 6 Feet Long	1 Each	1
8	93625A200 18-8 Stainless Steel Nylon-Insert Locknut, M5 x 0.8 mm Thread	1 Pack	1
9	90128A268 Zinc-Plated Alloy Steel Socket Head Screw, M6 x 1 mm Thread, 40 mm Long	1 Pack	1
10	91654A106 18-8 Stainless Steel Screw Nails for Metal, Plastic & Plywood, Size 4, 1/4" Long	1 Pack	1
12	8575K254 Black Delrin® Acetal Resin Sheet, 5/64" Thick, 24" Wide x 24" Length	1 Each	1
13	91287A461 18-8 Stainless Steel Hex Head Screw, M8 x 1.25 mm Thread, 120 mm Long, Fully Threaded	2 Packs	2

Packing List

200 Aurora Industrial Pkwy
Aurora OH 44202-8087
330-995-5500
cle.sales@mcmaster.com

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6559637-05

Page 2 of 2

08/08/2018

Line	Description	Ordered	Shipped
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Shipped separately from our Chicago warehouse on 07/20

1	54175A74 6-Point Standard Impact Socket, 3/4" Square Drive, 50mm Size
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3	1
Each	



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO040531

Supplier: MCM001-VU
McMaster-Carr Supply Co,
P.O. Box 7690
Chicago, IL 60680-7690 USA
Phone: 330 995 5500
Fax: 330 995 9600

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: PO040531

PO Date: 7/18/18

Due Date: 8/17/18

**Purchase Order
Revision:**

Revision Date:

Ship-To Contact: Lavoie, Chantal
clavoie@dartaero.com

Via: Ground

Pymt Terms: 2% 10 Net 30

Freight Terms:

Special Comments:

Items

Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
11		MT-BRASS-C360-R2.500	2572T77 6FT	Brass C360 Round Bar 2.500"	Firmed -		8/17/18	6 ft	0 ft	6 ft	\$117.94166/ft	\$707.65

Grand Total: \$707.65

Order Notes

Procurement Quality Clauses
A005 RIGHT OF ENTRY
A016 PERSONNEL QUALIFICATION
A026 CERTIFICATION OF MATERIAL CONFORMANCE
A032 DOCUMENT SPECIAL REQUIREMENTS
A033 STATEMENT OF CONFORMITY/TEST RECORDS FOR NAS, AN and MS FASTENERS
A040 NOTIFICATION OF QUALITY ESCAPE
A041 QUALITY MANAGEMENT SYSTEM
A042 DART NOTIFICATION BY SUPPLIER
A043 RETENTION OF QUALITY DOCUMENTS

A048 COUNTERFEIT PARTS AVOIDANCE, DETECTION, MITIGATION AND DISPOSITION PROGRAM

A049 SUPPLIER AWARENESS

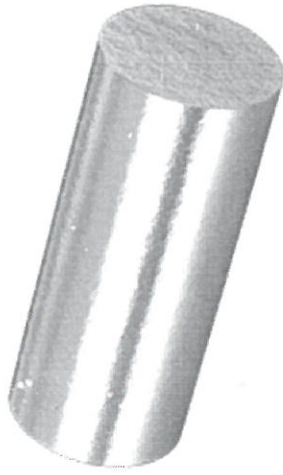
Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 8/14/18 10:32 AM dart.lavoie.chantal

McMASTER-CARR®

Ultra-Machinable 360 Brass Rod with Certification, 2-1/2" Diameter

2572177



Material	360 Brass
Cross Section Shape	Round
Construction	Solid
Appearance	Plain
Diameter	2 1/2"
Diameter Tolerance Range	-0.006" to 0.006"
Tolerance Rating	- Standard
Yield Strength	15,000 psi
Fabrication	Cold Worked
Temper	H02
Temper Rating	1/2 Hard
Hardness	Rockwell B25
Hardness Rating	Soft
Certification	Material Certificate with Traceable Lot Number and Test Report
Heat Treatable	No
Specifications Met	ASTM B16
Density	0.307 lbs./cu. in.
Surface Resistivity	39.9 Ohms
Melting Point Temperature	1630° F
Modulus of Elasticity	14.0 ksi × 10 ³

Thermal Conductivity	67 Btu/hr.-ft.-°F @ 68° F
Elongation	25%
Material Composition	
Copper	60-63%
Iron	0-0.35%
Lead	2.5-3.7%
Silicon	0-0.17%
Zinc	32.95-37.15%
Length Tolerance Range	-0.5" to 0.5"
Length	1/2 ft., 1 ft., 2 ft., 3 ft., 6 ft.
RoHS	Not Compliant

These rods come with a traceable lot number and test report. With the highest lead content of all the brass alloys, 360 offers the best machinability. Often called free-machining and free-cutting brass, it stands up to high-speed drilling, milling, and tapping operations with minimal wear on your tools. It's commonly used for gears, pinions, and lock components.



Non-Ferrous Metal Works (SA) (Pty) Ltd

EXTRUSION DIVISION

1 The Avenue East, Prospection, Kwa-Zulu Natal, South Africa Reg. No.: 1951/000559/07

Telephone: +27 (31) 902 7470 Fax: +25 (31) 902 8865

TEST CERTIFICATE

Customer AVIVA METALS, INC. PO BOX 800818 HOUSTON TEXAS 77280 United States	Test Certificate Number Works Order Number Sales Order Number Delivery Note No Invoice Number Purchase Order No. Alloy Quantity Ordered Weight Despatched	COC022691 WO0021809 SO00559573 SO-DN00009007 SO-IN00309504 HOU-13191-KZ 360 8900 Lbs 4334.244 Lbs
Description 2-1/2" DIA X 12 FT ROUND BAR Free Cutting Brass HALF HARD	Specifications ASTM B16 C36000 [10-2015] ASTM B249 [17]	

Mechanical/Physical Test Results

Size 1	Size 2	Area	Yield Strength		Tensile Strength		Elongation	Hardness		
mm	mm	mm ²	Kg/mm ²	PSI	Kg/mm ²	PSI	%	Vickers	Brinell	Rockwell
20.00	0.00	314.20	28.48	40,492.80	37.87	53,855.43	33.00	0.00	0.00	61.70
19.99	0.00	313.89	28.73	40,857.23	38.07	54,135.83	32.50	0.00	0.00	61.70

Chemical Composition

Charge Number	Cu	Zn	Fe	Mn	Al	Ni	Sn	Pb	Si	As	P	Te
E1501	61.220	35.191	0.280	0.000	0.000	0.100	0.300	2.890	0.000	0.000	0.000	0.000

Charge Number	Sb	Mg	Ti	Co	Cd	Sr	Cr	Ca	Other
E1501	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0	0.000

APPROVED

3:36 pm, May 17, 2018
ANITA MCGRAY, MTR Administrator



Remarks

MATERIAL HAS PASSED THE MERCUROUS NITRATE CRACK TEST IN ACCORDANCE WITH ASTM B-154 SPECS [12] WHERE APPLICABLE

**QUALITY
CONTROLLED
COPY**

We certify that the material is free from mercury contamination
Signed for on behalf
Non-Ferrous Metal Works(SA) (PTY) Ltd

Quality Manager

2018/04/24

Date

Metallurgist

8 7 6 5 4 3 2 1

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW ISSUE	17-732	17.11.22	VM	WM

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL:

SPECIFICATION:

PART NUMBER:

EXAMPLE:

C360 BRASS
ASTM B16
MT-BRASS-C360-R-[D.DDD]

WHERE D.DDD IS DIAMETER IN INCHES

MT-BRASS-C360-R-0.250

TOLERANCES PER MANUFACTURER SPECIFICATIONS

DART AEROSPACE Hemelbury, Ontario, Canada	
TITLE: BRASS C360 ROUND BAR	
DESIGN NO.	REV
DESIGN BY: VM 11/10/2017	MT-BRASS-C360-R
DRAWN BY: VM 11/10/2017	A
CHECKED: SAC 11/08/2017	1. DIMENSIONS ARE IN INCHES
INGL APPL: OP 11/10/2017	2. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
APPROVED: VM 11/10/2017	3. ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED
DATE: 11/10/2017	4. TOLERANCES UNLESS OTHERWISE SPECIFIED
SCALE: NTS	WEIGHT: N/A LBS
SHEET 1 OF 1	
COPYRIGHT © 2017 BY DART AEROSPACE LTD.	
THIS DRAWING IS THE PROPERTY OF DART AEROSPACE LTD. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD.	

8 7 6 5 4 3 2 1

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-BRASS-C360-R2.500

PO / BATCH NO.: P0040531/5102066

DATE: 18/08/14

MATERIAL CERT REC'D: KS

THICKNESS ORDERED: 2.500"

QUANTITY RECEIVED: 6PT

THICKNESS RECEIVED: 2.500"

QUANTITY INSPECTED: 6PT

SHEET SIZE ORDERED: —

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	ASTM B36
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	P0040531
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>AS</u>		SIGNED OFF BY: _____	
DATE: <u>18/08/14</u>		DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in